

Electricity Generation: Pollution Control
Airborne and particulate emissions; de-sulfurization, effluent
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1. Briefing the EPDC's profile

Government owned company with two thirds of the equity sharing established in 1952.

Total installed capacity 14965MW(Hydroelectric power 8261MW ,Thermal power 6704MW)

Thermal power station has been started from 1962 for the domestic coal utilization.

The Flue Gas De-sulfurizer(FGD) has been applied from 1975 for the domestic relatively high sulfur coal.

The imported coal fired power station has been started the operation from 1981 because of the rapid increase of the imported oil price.

The De-NOx equipment has been applied from 1983.

2. Outline of Matsuura power station(2x1000MW)

ESP efficiency 99%over Dry high temperature ESP
Dust density at the outlet of ESP 150mg/Nm³

FGD efficiency DeSOx 92% Wet Limestone-Gypsum process
Sulfur density at the outlet of FGD 80ppm
Dust removal 82% Dust density at the outlet of FGD 30mg/Nm³

NOx Combustion improvement +DeNOx equipment(80% removal)
NOx density at the outlet of chimney 60ppm

Effluent Cooling sea water: temperature difference between inlet and outlet 7 under
Waste water : pH 6.5 8.5 , COD Max 15mg/l Day average 10mg/l
SS Max 15mg/l Day average 10mg/l, Oil Day average 1mg/l

3. EPDC's developing record of airborne environmental protection equipment.

1960th:Low temperature dry type ESP for the domestic coal with the relatively high sulfur content over 1%.

1970th:Low temperature dry type ESP and FGD(old model without the air injection in the absorber tank: power consumption 2% of the generation output) for the domestic coal.

1980th:High temperature dry type ESP, DeNOx equipment and FGD(old model) for the imported coal with the low sulfur content below 1%.

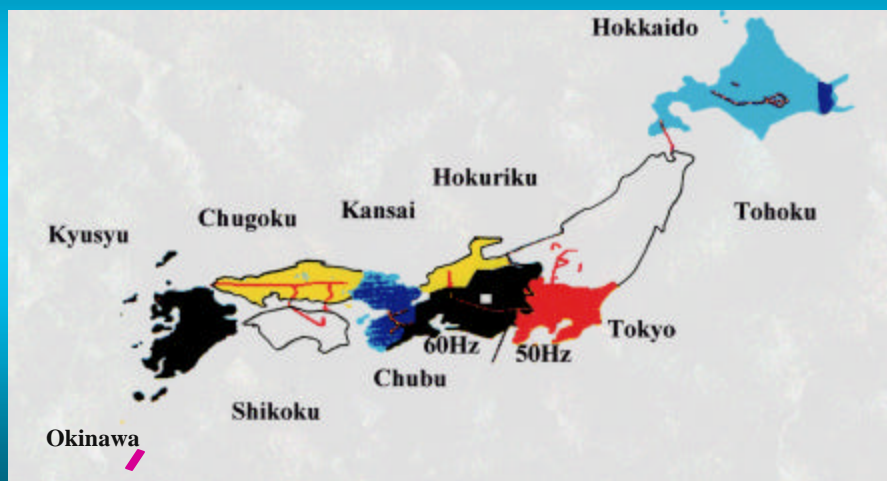
1990th: Low temperature dry type ESP, DeNOx equipment and FGD(new model with the air injection: power consumption 1% of the generation output) for the imported coal with the low sulfur content below 1%.

4. Introduction of latest power plant located in the urban area whose environmental requirement is almost as same as those of the gas fired power station. EPDC will apply the activated carbonic FGD instead of the conventional wet type limestone-gypsum process in order to achieve the high DeSOx efficiency.

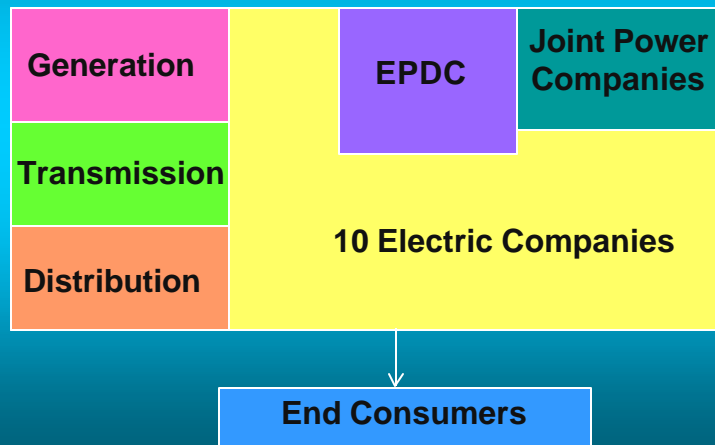
5. Outline of simplified FGD system demonstration-tested in China under the MITI's charge for more economical SO₂ removal cost instead of the high removal efficiency.

BASIC PROCESS FOR THERMAL POWER PLANT DEVELOPMENT

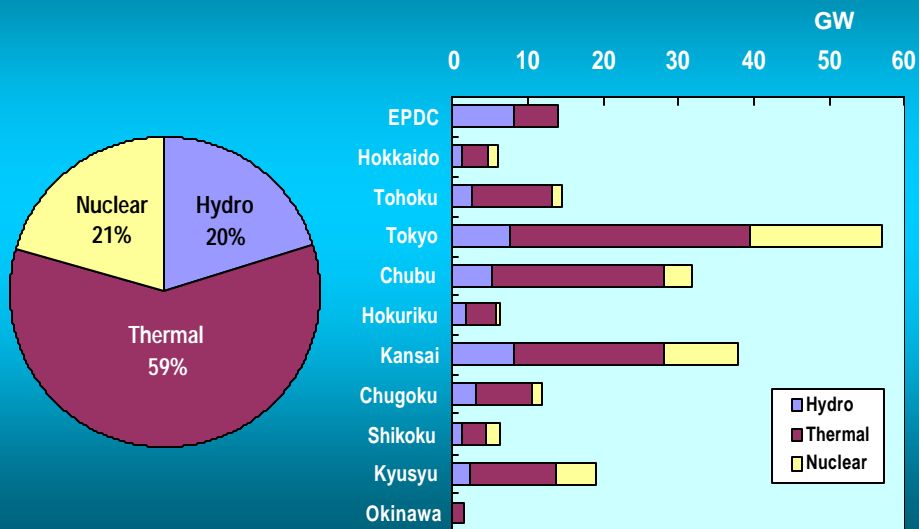
SERVICE TERRITORIES OF JAPANESE ELECTRIC UTILITIES



ELECTRIC POWER INDUSTRY IN JAPAN

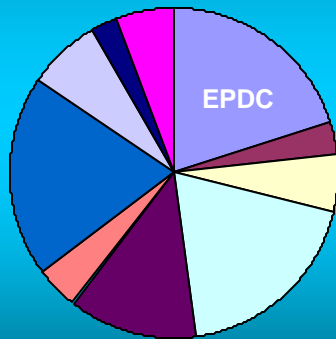


INSTALLED CAPACITY BY COMPANY

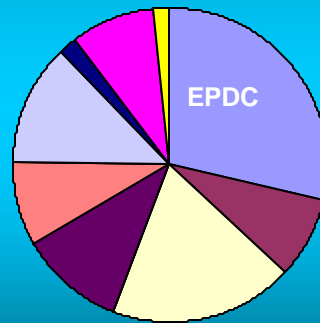


INSTALLED CAPACITY, HYDRO / COAL

Hydro



Coal-Fired



EPDC Hokkaido Tohoku Tokyo Chubu Hokuriku
Kansai Chugoku Shikoku Kyusyu Okinawa